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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/092,157 | 03/06/2002 | Ronald M. Reano | RUN-101-C | 9397 |

7590 03/13/2003

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| EXAMINER |
|---|
| KOBERT, RUSSELL MARC |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2829 | |

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/092,157 | REANO ET AL. | |
| | Examiner | Art Unit | |
| | Russell M Kobert | 2829 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *06 March 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4 & 6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. A good example of such a title, although **not necessarily related to this specific case**, could be "*Method and Apparatus for Passive Optical Characterization of Semiconductor Substrates Subjected to High Energy (MEV) Ion Implantation Using High-Injection Surface Photovoltage.*"

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

**Presently, the Abstract has less than 50 words.**

Correction is required.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "means for compensating the sensed characteristic of the output optical signal containing electric field information that is corrupted by temperature variations," as mentioned in claims 1 and 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 4, 7, 8, 10, 11, 13, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Erickson et al (4002975).

Erickson et al anticipates an electro-thermal field mapping apparatus for scanning a workpiece comprising:

Means for generating an optical signal (24);

An electro-optic field-mapping sensor (18) for receiving the generated optical signal and for generating an output optical signal that is influenced by a free-space electric field associated with the workpiece (56) passing through the sensor;

Means for sensing (24) a characteristic of the output optical signal containing electric field information; and

Means for compensating (70) the sensed characteristic of the output optical signal containing electric field information that is corrupted by temperature variations (col 15, ln 30 – col 16, ln 15); as recited in claim 1.

As to claim 2, the sensor comprises at least one crystal (KDP) having a predetermined orientation (col 9, ln 20-22).

As to claim 4, having means for scaling relative electic field information to absolute units is disclosed (col 9, ln 23 – col 10, ln 20; see Tables Titled "ELECTRO-OPTIC MATERIAL PROPERTIES" AND "CRYSTALS OF THE KDP GROUP").

As to claim 7, having means for measuring temperature from the output optical signal is anticipated (col 15, ln 60-65; note "beam source 57 may use the same laser 2 as used in isolated section 24," see col 15, ln 53-54).

As to claim 8, having means for simultaneously measuring electric field and temperature from the output optical signal is anticipated (See Figure 4).

As to claims 10, 11, 13, 16 and 17, the methods described are considered the inherent methods of using the apparatus of claims 1, 2, 4, 7 and 8.

6. Claims 1, 2, 4-11 and 13-18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bosselmann et al (5895912).

7. Claims 1, 2, 4-11 and 13-18 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Bosselmann et al (5895912).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson et al (4002975) in view of Zhang et al (5952818) or Bosselmann et al (5895912) in view of Zhang et al (5952818).

Zhang et al teach that the crystal can be made of gallium arsenide (GaAs) (col 11, ln 36-39) as mentioned in claims 3 and 12.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have combined the teaching of Zhang et al with either that of Erickson et al or Bosselmann et al to make the claimed invention because each teach

that various material composites can be used to make electro-optic sensitive crystals. Moreover, each teach the use of electro-optic sensitive crystals to modulate electric field information as an output optical signal.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Feldkeller (4269483), Tada et al (4563093), Sun et al (4752141) and Miller et al (5247244) show electro-optic voltage and/or electric field measurement systems.

A shortened statutory period for response to this action is set to expire three month(s) from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (703) 308-5222.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Russell M. Kobert
Patent Examiner
Group Art Unit 2829
March 7, 2003

KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
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